

REMARKS

As a preliminary matter, claims 1 and 14 are amended to correct spelling errors, and are merely cosmetic changes that do not effect the scope of patentability. Claims 1-6 and 14-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (JP 2000-275685) in view of Bradshaw et al. (U.S. Patent No. 5,061,047). Applicants respectfully traverse the rejection because there is no motivation to combine the references.

The Examiner acknowledges that Shimizu fails to disclose a temperature range of the cholesteric phase of the phase sequence on a liquid crystal having a temperature width of not less than 3°C and a cooling rate of 3-10°C/ minute, as recited in claims 1 and 14. (See page 4, lines 5-8 of the Office Action). However, the Examiner cites Bradshaw as disclosing this feature.

Bradshaw describes liquid crystal materials cooling at a rate of less than 20°C/minute within +/-5°C of the cholesteric/smectic phase transition. However, the present invention, as recited in claims 1 and 14, has a period in which *the temperature of the liquid crystal is kept* within a temperature range during either the cholesteric phase or the chiral nematic phase during cooling. That is, the temperature remains constant or the cooling rate is greatly reduced for a specific time period. Bradshaw does not teach any cooling procedure once the temperature of the liquid crystal is kept within the above-described temperature range.

Bradshaw merely describes in claim 1 the feature of heating the liquid crystal material to the cholesteric phase and then introducing it into the cell, but does not teach cooling after heating the liquid crystal to a temperature of the isotropic phase. Accordingly, one skilled in the art would not readily modify the liquid crystal display device of Shimizu to cool the liquid crystal with a temperature width of not less than 3°C from the isotropic phase-cholesteric phase-chiral smectic C phase or the isotropic phase-chiral nematic phase-chiral smectic C phase, as recited in independent claims 1 and 14.

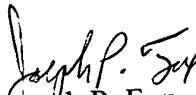
New claims 16-17 are added, and further define that during the period when the liquid crystal is kept within the temperature range showing the cholesteric or the chiral nematic phase during cooling, that the cooling rate of the liquid crystal is 0.5°C/minute or less.

For all of the foregoing reasons, Applicants submit that this Application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By


Joseph P. Fox
Registration No. 41,760

May 15, 2006
300 South Wacker Drive
Suite 2500
Chicago, Illinois 60606
(312) 360-0080
Customer No. 24978